Subpart C - PLANNING, DESIGNING, BIDDING, CONTRACTING, CONSTRUCTING AND INSPECTIONS

This instruction can be found at the following web site address:
http://www.rurdev.usda.gov/tx/utilities.htm

1780.53 GENERAL.

This State Instruction supplements RUS Instruction 1780, Subpart C – Planning, Designing, Bidding, Contracting, Constructing and Inspections. This Instruction should be reviewed along with RUS Instruction 1780 and RUS Bulletin 1794A-602 prior to developing a project.

1780.54 TECHNICAL SERVICES.

Each applicant is responsible for selecting its engineer. Any engineer registered in Texas with sufficient experience, capital, equipment and staff to design the project may contract with the applicant. Each phase should have a separate agreement. The following forms can be used when contracting for engineering services:

- Form RD 1942-19 (Rev. 10/96), Agreement for Engineering Services, short form, with Form RD-TX 1942-19, Attachment I (Texas), 3 pages. This agreement can be used for projects/contracts with construction cost under $100,000.

- EJCDC* E - 510 (2002 Edition), Standard Form of Agreement Between Owner and Engineer for Professional Services, Funding Agency Edition, and Exhibits A through J, including Exhibit C - Attachment I (Texas), 4 pages.
  Use Texas RUS Bulletin 1780-26 for Instructions.

  * (EJCDC = Engineers Joint Contract Documents Committee)
  The EJCDC contract documents can be purchased from the following organizations: National Society of Professional Engineers, American Society of Civil Engineers, American Society of Engineering Companies and Associated General Contractors of America.

1780.55 PRELIMINARY ENGINEERING REPORTS AND ENVIRONMENTAL REPORTS.

Preliminary Engineering Reports will be prepared by the applicant's engineer. It shall be bound, dated, signed and sealed by the professional engineer registered in the State of Texas. It will be prepared in accordance with the following applicable bulletins and this instruction:

- RUS Bulletin 1780-2, Preliminary Engineering Report - Water Facilities

- RUS Bulletin 1780-3, Preliminary Engineering Report - Wastewater Facilities
- RUS Bulletin 1780-4, Preliminary Engineering Report - Solid Waste Management Facilities
- RUS Bulletin 1780-5, Preliminary Engineering Report – Storm Water Facilities

The bulletins can be found at http://www.usda.gov/rus/water/regs-bulletins.htm

RUS Bulletin 1794A-602 Guide will be used for Preparing the Environmental Report for Water and Waste Projects.

The preliminary engineering report is normally the only engineering report required by USDA Rural Utilities Service (RUS). It establishes the PROJECT SCOPE, FUNDING REQUIREMENTS, and outlines the BASIC PROJECT DESIGN. It should be submitted together with the environmental report. Any changes in the proposed project after approval of the preliminary engineering report will require an amendment be provided by the applicant's engineer for USDA Rural Development review and approval.

A **Guide for preparation of the Preliminary Engineering Report** is also available at http://www.rurdev.usda.gov/tx/utilities.htm

Detailed cost estimate should include unit cost of all pipe, valves, road crossings, stream crossings and all distribution system appurtenance as it will appear in the bid schedule. Detailed cost estimate should include unit cost of collection system pipe by diameter and depth. Depth increments should be 0 – 5′, 5′ – 7′, 7′ – 9′, etc. Estimated cost of wells and plant work should also be broken into components. A contingency not to exceed 10% of construction cost should be included. Engineering costs should be separated as estimated/approved in the Agreement for Engineering Services. Other costs should be included, such as: interest during construction, land, legal, water rights, etc.

NOTE: **If the proposed project includes water and wastewater, two separate complete cost estimates are required.**

Funding from USDA Rural Utilities Service, State, and other funding sources MUST be clearly distinguished in the detailed cost estimate.

> Annual Operating Budget. The report should contain the annual operating cost, as well as a typical operating budget. The budget should include principal and interest on loan, power cost, water cost if purchased, maintenance, labor, taxes, insurance, audits, equipment leased, reserves, and other costs. The minimum annual reserve payment must be equal to 1/10 of the annual payment. **Short lived assets** must also be addressed to include items typically not found in O & M expenses that need to be replaced over 1 to 15 years. Avoid including dry taps in

calculating income from water sales and livestock water meters, unless no other livestock water supply will be available. The budget should be prepared on Form RD 442-7, "Operating Budget," in consultation with the applicant and USDA Rural Development area/sub-area office personnel. The income from dry taps should be shown on a separate line and not be included in the feasibility of the project. Include all taxes for State, County, schools, etc.

1780.57 DESIGN POLICIES.

(a) Compliance with the State Regulatory Authority Standards. Each USDA Rural Utilities Service financed facility will comply with the requirements of the TCEQ (Texas Commission on Environmental Quality), or other appropriate regulatory agency. The applicant is responsible for obtaining and presenting to USDA Rural Utilities Service evidence of such compliance.

(b) Consistency with Area Plans for Development. Projects for which USDA Rural Utilities Service funds are to be used must be consistent with development plans for the area in which the project is located. Applicants will provide USDA Rural Utilities Service with evidence of consistency with such plans. Planning should not be done within the extraterritorial jurisdiction of any city unless an understanding has been reached with the appropriate city officials. The extraterritorial jurisdiction of towns and cities in Texas is as follows:

Less than 5,000 population	½ mile radius
5,000 – 25,000 population	1 mile radius
25,000 – 50,000 population	2 mile radius
50,000 – 100,000 population	3 ½ mile radius
Over 100,000 population	5 mile radius

(c) Fire Protection. Fire protection will be considered for each water system. Due to the entity's income, it may not be possible to install a "key rate" system; however, the size and location of facilities should be consistent with a fire protection plan. It must meet the TCEQ minimum pressure requirements.

Where it is impractical to install fire hydrants in low density areas, fire tank filling valves should be located at the source of supply, the storage area, and at other strategic locations. The applicant and its consulting engineer should give the local fire department authorities an opportunity to assist in the selection of sites for such valves.

(d) Water System Designs. The following are guides for use by engineers in preparation of preliminary designs and estimates for rural water systems:

1. General. All water systems shall be designed and constructed so as to conform to all applicable State, Federal, and local laws, ordinances, and regulations.

2. Water Quality. The quality of water to be supplied must meet the approval of the TCEQ.

3. Raw Water.

   a. SUPPLY. A minimum quantity of 0.6 gpm per meter will be acceptable.

   b. TREATMENT. Treatment methods and facility design must be acceptable to the TCEQ and in accordance with acceptable design criteria. The proposed treatment method and facility must be guaranteed to produce potable water from the supply for a minimum period of one year. Adequate disinfection facilities will be required at each booster station. Where treatment of water is involved, gas chlorination should be used. **Any propose proprietary product/ technology** is not consistent with open and free competition. It can be used only if the project requirements are unique and must be documented by the applicant's engineer in writing. (Exception: interchangeability of part or equipment).

4. Pumps and Motors. Pump selection shall be based on predetermined conditions and demand. Pump evaluation shall consider pumping rate, number of pumps, peak demands, elevated storage, demand horsepower, total power cost and individual pump efficiency curves. All installations shall utilize the highest efficiency pump practical. Pumps should be protected from operating under no-flow conditions and from over pumping and overloading by means of appropriate automatic controls. Transfer pumps must be provided in duplicate with each having a rated capacity of 0.6 gpm per connection. Two or more service pumps should be provided with a total rated capacity at 2.0 gpm per connection.

   a. SIZE. The size of pumps and motors should normally be based on the existing flow conditions plus allowance for growth that is reasonably expected to occur within the life of the pump or motor. Plant or well piping should be sized for growth allowance on a longer period of time.

   b. MOTOR PROTECTION. Adequate safety devices must be provided to protect electric motors from damage caused by "single phasing," overheating, lightning, etc.

(1) Power Supply. Prior to preparation of the engineering report and selection of pumping sites, the engineer should contact the local power company to determine the power supply available. Many power companies can only supply open Delta power three-phase. If the power company cannot guarantee a balanced current, the use of the next larger size motor is recommended. The engineer should include in the engineering report the type of power that will be available. The power company may require contributions in aid of construction – such cost must be included in the project cost.

(2) Three-Phase Monitor. Power monitors must be installed to protect electric motors from high voltage, low voltage, phase failure and phase reversal. Line shaft turbine pumps with use of the next larger size motor is recommended for water wells where there is a phase balance problem.

(3) Thermal Overloads. Normal thermal over-loads used for standard motors will not trip fast enough to protect submergible pump motors and extra quick trip type heaters must be specified.

5. Storage. Minimum total storage volume shall not be less than 200 gallons per meter served. It may be desirable to provide additional storage when the source of water is limited and/or supply is from a single well. Additional storage may also be required for fire protection, growth, large users, etc., based on a study of the specific project. Storage facilities will be designed to meet current American Water Works Association (AWWA) specifications. Foundation design for standpipes and elevated storage tanks will be based on soil investigation by a reputable consultant.

6. Distribution System.

   a. PRESSURES. The maximum pressure on any service should not exceed 80 psi. Normal pressures should not be less than 35 psi at the curb stop, calculated with the design flow rate of 1.5 gpm to each meter in the system. Individual and/or in-line pressure reducing valves should be used to reduce high pressures on the line to service connections.

   b. FLOW RATES. Flow rates shall be computed for the analysis of the specific project. Minimum acceptable flow rates are:

      Q = 1.5C with a minimum pressure of 35 psi

      When Q = flow in gpm
      C = customers

Pipe sizes shall be computed based on the flow rate required to serve all existing houses or potential users in the service area. Engineers must also consider sizing pipe for fire flow, potential extensions, loop completion, etc.

c. PLANT SITE. The plant sites are to be fenced with a non-climbable fence. The pump house should have adequate cross ventilation and insulation. A thermostatic controlled heater should be provided in the pump house to prevent freezing. All exposed outside piping must be insulated. The plant site shall be readily accessible with entry drive and culvert and rock rip-rap to prevent erosion, with well drained asphalted or coarse stone surfacing preventing soil tracking onto adjacent highway.

d. GRAVITY FLOW. Gravity flow systems shall be used to the fullest extent possible by utilizing ground storage tanks, standpipes, elevated tanks, etc., for all or portions of the distribution flow. Elevated storage in the amount of 100 gallons per connection should be provided above the elevation required to produce the minimum design pressure.

7. Hydropneumatic Pumping. Pumps supplying the pressure tank shall be sized to avoid short cycling of the pump. The following should be included in plant design:

   a. Provide two or more booster pumps with a total capacity of 2.0 gpm per connection. Provide two transfer pumps with a minimum capacity of 0.6 gpm per connection.

   b. Provide pressure tank capacity in the amount of 20 gallons for each meter served.

   c. Flow to distribution system should not pass through the pressure tank.

   d. Pump selection and plant design shall provide for an efficient and economical operation.

8. Pipeline Installation. Installation shall be in strict accordance with the manufacturer's recommendations and the written specifications. In areas where rock excavation is necessary, the design shall provide for over excavation and refill to grade with acceptable material.

   a. DEPTH. The depth of cover shall be 30 inches except in County, State Highway and railroad crossings, where the depth shall be 36 inches in the barrow ditches. Gully and stream crossings shall also be

a minimum of 36 inches deep to the top of the pipe. Bedding and cover materials shall be as approved by owner's consulting engineer.

b. SANITATION. The pipe shall be kept clean of all foreign matter. At the termination of pipe laying, the open end of the pipeline shall be closed by a suitable cover until laying operations are resumed.

c. JOINING. Only trained and certified employees will be permitted to join the pipe.

d. LAYING. Pipe shall be laid on a level trench bottom. An irregular trench bottom will require additional bedding.

9. Pipe Specifications. It is the responsibility of the consulting engineer to see that materials meet specifications. In addition to making routine checks of dimensions on plastic pipe provided for each project, each contract should have a paragraph similar to the following:

> "Each load of pipe delivered to the job site will be checked by the engineer to assure that it meets specifications. When a load of pipe is found to have inadequate wall thickness or tolerances greater than specified, randomly selected samples of the pipe shall be immediately forwarded to an approved testing laboratory with instructions to check the pipe for compliance with applicable product standards, American Society for Testing Materials (ASTM) specifications and other specifications for the specific contract. When the testing laboratory reports concur that the pipe does not meet specifications, it is to be understood that all of the defective pipe delivered to the site will be immediately removed and replaced by the contractor at no additional cost to the owner."

10. Valves. Sufficient valves should be provided to permit isolation and repair of lines and appurtenances.

a. GATE VALVES. Gate valves larger than 2 inches should be brass-fitted cast iron. Smaller than 2 inches may be bronze. All valves shall conform to current AWWA standards and have a minimum pressure rating of 150 psi.

b. CURB STOPS. Curb stops shall be bronze and conform to current AWWA standards.

c. AIR RELIEF. Adequate air relief and flushing valves must be provided in accordance with good engineering design and industry

standards. Air relief valves shall be connected to pipelines with flexible designed connections and set for protection from equipment and livestock.

d. CHECK VALVES. Non-slam check valves should be used on discharge line of booster pumps and other critical areas where surges are expected and check valves are needed.

e. CORPORATION STOPS. Corporation stops shall be provided at all services.

f. VALVE MARKERS. Valve markers shall be provided in rural areas.

g. PIPELINE MARKERS. Pipeline markers are recommended at all road bores.

11. Controls. Controls should be sturdy and simple, automatic in all cases, and adequate to protect equipment and maintain proper flow. Backup all automatic controls with manual controls. A schematic diagram of the electrical controls and wiring must be made a part of the plans.

When controls are required to operate valves and pumps to fill distant tanks, the engineer will include a narrative detailing the sequence of operation.

12. System Testing and Disinfecting.

a. Before being placed into service, the entire system shall be disinfected in accordance with the requirements of the TCEQ.

b. When pressure testing new lines, leakage shall not exceed 10 gallons per inch of pipe diameter per mile of pipe per 24 hours, when tested at 1 ½ times the working pressure or rated pressure of the pipe, whichever is greater. A minimum 4-hour test shall be performed successfully prior to approval by the engineer.

c. The consulting engineers will furnish the owner and USDA Rural Development area/sub-area office personnel a signed certification stating the pressure test(s) has been performed in accordance with the specifications. The certificate should contain, but not be limited to, the following:

(1) Date tests were performed.
(2) Name of people in attendance.
(3) Brand name of pipe and pressure rating.
(4) Test pressure and length of time applied.

(5) Number of leaks found during testing.
(6) Comments.

(e) Sewer System Design. The following are guidelines for use by engineers in preparation of preliminary design and estimates for sewer systems.

1. General. All sewer systems shall be designed and constructed so as to conform to all applicable Federal, State, and local laws, ordinances, and regulations.

2. Effluent Quality. A discharge permit must be applied for and obtained from the TCEQ. This permit should be acquired as early as practicable.

3. Treatment. Treatment methods and facilities must be acceptable to the TCEQ and in accordance with acceptable design criteria. For new collection systems, loadings from infiltration should be minimum. Calculated detention times for treatment plants should be presented for each cell or unit. All designs will consider expected reasonable growth.

4. Lift Stations. Where two or more pumps are utilized, their operation sequence and control system should be described. Normally on duplex installations the second pump is designed to operate in a back-up type operation. Controls requiring both pumps to be called on line simultaneously when lift stations overload may not be in the best interest of system operation. Lift station design should not transfer a problem to downstream lines and the treatment facility in lieu of correcting the problem upstream of the lift station. An audio/visual alarm system (red flashing light and horn) shall be provided for all lift stations. The alarm system shall be activated in case of power outage, pump failure or a specified high water level.

5. Collection System. Line sizes shall be computed based on expected flow rates to serve all existing houses or potential users in the service area plus reasonable growth. Pipe selection must consider soils characteristics, slope, depth of cover and/or exposure. The design and selection of materials shall insure a watertight system and confirmation of appropriate tie-in elevations. For new systems, infiltration and non-sewerage inflows should be considered as minimal. Manholes should be designed and specified as watertight construction. Precast manholes with O-ring joints, gasket line installation, and water tight manhole cover should be utilized. Wherever practicable, manholes should be eliminated with the concurrence of the regulatory authority. On PVC pipe collection systems, cleanouts should be utilized on the end of gravity lines and wherever practical to reduce construction costs and the infiltration associated with

manholes. The pipe shall be identified in the plans and technical specifications with its appropriate ASTM, American National Standards Institute (ANSI) or AWWA standard numbers for both quality controls (dimension, tolerance, etc.) and installation (bedding, backfill, etc.).

6. Installation of Collection System. Installation shall be in accordance with the manufacturer's recommendation and the written specifications.

   a. Trench Safety. Trench safety provisions shall be in accordance with applicable state laws. An item for trench safety construction will be included in the bid schedule for construction.

   b. Testing. Sufficient testing of collection system installation for insuring watertight construction shall be included in the specifications and performed prior to prefinal inspections. The project engineer shall observe the final testing of collection lines.

      (1) Manholes shall be tested for leakage separately and independently of the wastewater lines. An infiltration, refiltration or low pressure air test shall be specified. Deflection tests shall be performed on all flexible pipes.

      (2) If manholes are located within the 100-year flood plain, the manhole covers shall have gaskets and be bolted or have another means of preventing inflow.

   c. Sewer Taps. Sewer taps should be installed during the construction of collection lines with TEE and Wye fittings. Taps shall be a minimum of 4 inches and extend to the finished ground surface of property to be served. All service taps shall be capped until house services are installed. House service shall extend from the property line to the connection of the house sewer.

1780.61 CONSTRUCTION CONTRACTS.

When the project includes both water wells and distribution system construction, the owner's engineer will not issue Notice to Proceed for distribution contracts or treatment plant until a water source has been approved by the TCEQ. To avoid delays in awarding distribution contracts, a well test hole should be drilled or a well completed prior to bidding the distribution system.

All contract documents shall be provided with an index to the technical specifications. The engineer should prepare separate contract documents, plans, and specifications for; water storage facilities, elevated storage tanks, water distribution systems, water treatment plant, water well collection system, wastewater treatment plant.

(a) Contract Documents. For review purposes, contract documents should be presented in the order as shown in Appendix A to this Instruction, "Assembly of EJCDC Contract Documents," or Appendix B, "RUS Water/Waste Assembly of Contract Documents for Short Form Construction Contract."

(b) Contract Specifications. When a specific manufacturer or supplier is named in the contract specifications, **at least two competitive manufacturers or suppliers** of the equipment or product must be specified along with "or equal" or "or approved equal" clause. No brand names shall be shown in the contract bid schedule. See §1780.70 Owner's Procurement Regulations for more specific instructions.

(c) Construction Plans. All plan sheets shall bear the seal and signature of the designing engineer and date of execution.

Environmental Mitigation. Mitigation requirements as stated in the approved Environmental report and the Letter of Conditions shall be incorporated by the engineer in the contract plans and specifications.

1780.67 PERFORMING CONSTRUCTION.

All projects financed by USDA Rural Utilities Service shall have construction signs posted at the construction site at the beginning of construction. Sign shall remain throughout the construction period. A sketch and specifications are provided in Appendix C to this Instruction. These specifications can also be found at the following web site:

www.usda.gov/rus/water/ees/englib/doc/contract.htm

The same specifications may also be used for the permanent sign.

1780.70 OWNER'S PROCUREMENT REGULATIONS.

All procurement transactions, regardless of whether by sealed bids or negotiation and without regard to dollar value, shall be conducted in a manner that provides maximum open and free competition. The procurement also must comply with the Texas State law (Texas Water Code).

The contract specifications should provide a clear description of the technical requirements for the equipment, product, or service to be provided. These technical requirements should be stated in terms of functions to be performed or performance required, including the range of acceptable characteristics or minimum acceptable standards.

Use of Brand Names: When it is impractical or uneconomical to make a clear and accurate description of the technical requirements, the design engineer may use a "brand name or equal" description. The "brand name or equal" approach should be used to supplement the description of technical requirements. The design engineer shall name **at**

least two competitive manufacturers or suppliers of the equipment or product being specified along with an "or equal" or "or approved equal" clause.

A proprietary specification is not consistent with open and free competition and should be used only when project requirements are unique, as documented by the design engineer in writing and concurred by the USDA Rural Development engineer, or needed for interchangeability of part or equipment.

Bid Schedule Format: A base bid with substitutes is not allowed. No name of any specific manufacturer or supplier is allowed. Additive and deductive line items are encouraged to prevent cost overruns and project delays.

If the selection of a major equipment could significantly impact the remainder of the project, a **"pre-selection"** process should be conducted. Two methods may be used:

1. A pre-bid type of competitive negotiation in which manufacturers are requested to submit proposals to the owner on technical merit and prices. (Request for proposal is publicized). The owner and engineer analyze the pre-bids and select the equipment based on price and other factors. The name and price of the major equipment is then included in the general contract bid documents to prevent this "pre-selection" process from turning into a sole-source specification.

2. A phased bid is another pre-selection method. The first phase would be a competitive bid for the major equipment item based on technical requirements (this may include a pilot test). After the major equipment manufacturer is selected the project design can be finalized, and the remaining contracts bid competitively. Any first-phase contracts are bid with a hold period sufficient to allow for completing design of the remainder of the project and biding the remaining contracts with the understanding that the first-phase contract(s) will be assigned to a general contractor when the second-phase contract is awarded. The owner discloses the name and price of the first-phase pre-selected contractor in the second-phase contact bidding documents.

1780.72 PROCUREMENT METHODS.

Invitations to bid will be sent to local and regional contractors who might be interested in bidding on projects of the size and scope concerned. In order to assure good coverage for inviting bids, advertisements for bids will be published in a newspaper having at least region-wide circulation and one or more of the following trade journals: The Builders Exchange of Texas, Inc., The Associated General Contractors of America (various chapters) and Dodge Reports.

For non-profit organizations, advertisements will be published at least two weeks prior to the bid opening date. Advertisement for public bodies will be published in accordance with State statutory requirements for the particular body and in the above referenced trade journals. The bid date will be set with concurrence of the USDA Rural Development area/sub-area office personnel and borrower for an opening date far enough in advance to make plans to attend.

1. Pre-Bid Teleconference with the State Office, the engineer, applicant (if desired) and the local office loan specialist must be scheduled prior to bid opening.

2. Bid Delivery. Bids should be delivered at a designated place and not later than a designated date and time, but not on a legal holiday or the day following. Bids should be opened and read in the presence of bidders and a tabulation of all bids received should be furnished to each bidder. An itemized reading of the apparent low bid or bids will be made at the request of any bidder. Under no circumstances should a bidder be permitted to alter his bid after the time designated for receipt of bids.

3. Bid Openings. Bid openings will be attended by a USDA Rural Development representative. The engineer shall provide a copy of the itemized bid tabulation to the USDA Rural Development area/sub-area office. The area/sub-area office must forward a copy of the bid tabulation to the State Office Community Programs Section. **The engineer's written recommendation of the contract award must also be provided.**

1780.75 CONTRACT PROVISIONS.

(a) Contract Approval. The applicant's attorney will review the executed contract documents, including performance and payment bonds, and provide USDA Rural Utilities Service with **Certificate of Owner's Attorney** (**Exhibit GC-A of EJCDC No. 710, General Conditions**) stating that the documents have been properly executed and that the persons executing these documents have been properly authorized to do so. If the Short Form contract documents are being used, **RUS Bulletin 1780-14, Supplemental General Conditions, page 7, paragraph 14, Certificate of Owner's Attorney**, must be used.

The following documents must be attached and made a condition to the Bid:
1. Bid Security (Bid Bond or Certified Check).
2. Form RD 400-6, Compliance Statement, signed (for all bids over $10,000).
3. Form AD-1048, Certificate Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions (for bids over $25,000).

4. RD Instruction 1940-Q, Exhibit A-1 only, Certification for Contracts, Grants & Loans (contracts over $100,000).
5. A tabulation of subcontractors.

All contracts will contain a provision that they are not in full force and effect until they have been approved by USDA Community Programs in writing. USDA Rural Development area/sub-area office personnel will review the contract in accordance with the executed contract checklist provided in the RUS Training Guide and end one copy of each executed contract with recommendations to the State Office Community Programs Section for approval.

(b) Filing Executed Instruments. After the contract and bond(s) have been properly executed, dated and approved by the USDA Rural Development State Office, Rural Utilities Service, Community Programs Section, the following instruments should be filed for record:

1. PUBLIC BODIES. With contracts and bonds furnished in connection with public works, the contract need not be filed for record since Chapter 2253 of the Government Code does not require the filing of these instruments.

2. NON-PROFIT CORPORATIONS.

   a. Contract Agreement. The original Agreement between Owner and Contractor, EJCDC C-521, or a true copy thereof, must be placed on file in the county clerk's office.

   b. The Payment Bond must be filed for record in accordance with Section 53.203, Texas Property Code.

   c. The county clerk shall index and cross index the Agreement and Payment Bond in the name of the original contractor and Corporation in the records kept for that purpose.

   d. The instruments must be placed on file and recorded in all counties where the facilities are located. The purpose of this requirement is to prevent any claimant from filing suit against the Corporation or against the property of the Corporation to obtain payment for labor or materials furnished by contractor and to relieve the Corporation of certain statutory duties.

1780.76 CONTRACT ADMINISTRATION.

Owners shall be responsible for maintaining a contract administration system to monitor the contractors' performance and compliance with the terms, conditions, and specifications of the contracts.

USDA Rural Development local office personnel will monitor the construction of all projects financed wholly, or in part, with USDA Rural Utilities Service funds. Prior to beginning construction, a pre-construction conference shall be held with USDA Rural Utilities Service/Community Programs reviewing its requirements. USDA Rural Development area/sub-area office personnel shall make construction inspections on a monthly basis during construction and more frequently where necessary to adequately monitor the acceptability of material inventories and development. Inspection by USDA Rural Development does not relieve the project engineer, project inspector or owner of their responsibility to insure the contractor is performing the work according to the contract documents.

Inspections. The resident inspector will work under the technical supervision of the applicant's project engineer and the role and responsibilities will be defined in writing and provided to USDA Rural Development for review.

1. Copies of all inspection reports by the project engineer and USDA Rural Development area/sub-area office personnel should be submitted to the State Office, Community Programs Section. The area/sub-area office personnel should receive copies of daily inspection reports on all projects. USDA Rural Development area/sub-area office personnel will utilize these reports in making their inspections and certifying partial payments.

2. When there is an indication that approved plans and specifications are not being complied with, USDA Rural Development area/sub-area office personnel should notify the State Office Community Programs Section (the State Office Engineer), and the borrower that project development is not acceptable, in addition to withholding future payments (advances). The owner's engineer will present a written recommendation for resolution of the problem to the owner, contractor and USDA Rural Development. The final action should be taken after consultation with the State Office engineer.

3. Payments. Payments for construction will be made using Form RD 1924-18 (Rev. 6-97), "Partial Payment Estimate." They will be prepared by the contractor, and revised and approved by the owner's engineer. They will also be approved by the owner prior to submitting to the USDA Rural Development area/sub-area office. Each payment estimate will contain a certification by the engineer that all material

purchased and all work performed is in accordance with the plans and specifications. The engineer will additionally certify that each load of the pipe delivered and incorporated into the work has been inspected by the engineer and found to meet specifications.

The governing body must also approve each payment estimate. If there is indication that construction is not being completed in accordance with the plans and specifications, or that any problems exist, the engineer should notify the USDA Rural Development area/sub-area office responsible for project monitoring. The engineer should furnish written review and inspection reports of deficiencies and corrective actions recommended.

- Pre-final Inspection. When the development has been substantially completed by the contractor(s), a pre-final inspection will be held. The owner's engineer shall notify TCEQ of the substantial completion of the project. The pre-final inspection will be made by the owner, owner's project engineer, contractor, area/sub-area office loan specialist and the RUS State Staff Engineer. It is recommended that Form RD 1924-12, Pre-final Inspection Report, be used. The engineer's recorded pre-final inspection report shall include the following:

    1. Compliance with all requirements of the State Highway Department, City, County Commissioner's Court, and Railroad etc., with respect to construction in right-of-way.

    2. Confirmation that lines have been pressure tested and the engineer or resident inspector observed testing.

    3. Facilities have been flushed clean, disinfected, and bacteriological tests approved by TCEQ.

    4. A field check was performed of all facilities and a list of all discrepancies (punch list) was provided to all parties.

    5. The working set of construction drawings was checked to insure all changes during construction have been recorded.

    6. Water tanks have been appropriately inspected with respect to tank primer and painting specifications. Appropriate tests were made of paint coatings and welds.

    7. A well brochure was provided containing the formation log, material settings sketch, production curves, chemical analysis, sand production

8. tests, pump warranty and brochures, and pump operating voltage and amperes.

9. Treatment plant, pumping stations, lift stations are in start up process and all systems are functioning.

10. Environmental mitigation measures required during construction are listed and engineer verifies that they have been complied with.

11. Final change order reconciling quantities has been processed.

12. Contractor, subcontractors, suppliers, laborers, etc., are not pursuing any Claims.

13. The engineer has provided a "Statement of Substantial Completion" and the date of the warranty has been established.

- Final Inspection. When all planned development has been completed in accordance with approved plans and specifications, and operational checks show that all items, singular or in combination, serve the purpose intended in an acceptable manner, a final inspection will be made. The following items should be accomplished and recorded by the project engineer at the time of final inspection and acceptance of the work:

    1. All planned development has been completed in accordance with executed contract documents. Items on prefinal punch list have been corrected.

    2. Prior to submitting the final pay estimate the engineer shall submit a "Statement of Completion" to the owner and USDA Rural Utilities Service. The statement shall include provisions for acceptance signatures of the owner and USDA Rural Utilities Service.

    3. Engineer’s final estimate of work.

    4. Final reproducible Record Drawings ("as-built") and two sets of prints delivered to the owner. The "as-built" drawings should be a reflection of what was installed, showing actual location of tie-downs for valves and other principal elements of the project construction, where knowledge of location and function are important.

    5. Certificates of acceptance or approval of work in right-of-way by State Highway official, City, County Commissioners, River Authorities, railroads and others.

6. TCEQ has been notified of the project completion.

7. Required guarantees, brochures, parts catalogs, operational procedure, etc., were delivered to owner.

8. Contractor provided evidence of all bills paid.

9. The applicant's engineer shall certify in writing that all requirements of state, county, and all other conditions of right-of-way easements, permits and licenses have been satisfied.

Changes in Development Plans. Change orders requiring State Office, Community Programs approval will be accompanied by comments and recommendations by the USDA Rural Development area/sub-area office personnel and will show that funds are available. USDA Rural Development area/sub-area office personnel will check all unit prices and totals and recommend for approval. If the proposed change affects approval of the plans given by the TCEQ or other agencies, then regulatory concurrence in the changes will be required.

Change orders should have sketches or revised plan sheets attached to show changed work. Changes shall be reviewed for environmental assessment purposes. Revisions or amendments to the environmental review by the consulting engineer and USDA Rural Development may be required.

Attachments:

Appendix **A** – Assembly of EJCDC Contract Documents (2 pages)

Appendix **B** – RUS Water and/or Waste Assembly of Contract Documents for Short Form Construction Contract (1 page)

Note: "USDA Rural Development" is not the name of any agency. It is the name of a mission area within the USDA. The name of the funding agency is RURAL UTILITIES SERVICE (RUS).